

CLAIMS

1. A process for alkylating a hydrocarbon feed which comprises contacting the hydrocarbon feed to be alkylated with an alkylation agent in the presence of 5 a catalyst comprising a solid acid, a hydrogenation metal, and 1.5 - 6 wt% of water, measured as the loss on ignition at 600°C.
2. A process according to claim 1 wherein the catalyst comprises 1.8 - 4 wt% of water.
- 10 3. A process according to claim 2 wherein the catalyst comprises 2 - 3 wt% of water.
4. A process according to any one of the preceding claims wherein the solid 15 acid is selected from the group consisting of zeolites, silica-alumina, sulfated oxides, mixed oxides of zirconium, molybdenum, tungsten, or phosphorus, chlorinated aluminium oxides or clays, and mixtures thereof.
5. A process according to claim 4 wherein the solid acid is a zeolite selected 20 from the group consisting of mordenite, zeolite beta, X-zeolites, and Y-zeolites.
- 25 6. A process according to any one of the preceding claims wherein the hydrogenation metal is a Group VIII noble metal.
7. A process according to any one of the preceding claims wherein the hydrocarbons are saturated hydrocarbons.
- 30 8. A process according to any one of the preceding claims wherein the catalyst is prepared by adding water to a dry catalyst comprising solid acid and hydrogenation metal before use in the alkylation process.

9. A process according to any one of claims 1-7 wherein the alkylation process is started using a catalyst comprising less than 1.5 wt% water and wherein water is added to the catalyst during the alkylation process.

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10. A process according to any one of claims 1-9 wherein water is added to the catalyst during the alkylation process by exposing a regenerated catalyst to a water-containing atmosphere, or by using a water-containing atmosphere during a regeneration step.

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